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THE END.

THE WEATHER OF THE MONTH.

By Mr. P. C. DAY, Assistant Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure for December, 1907, over the United States and Canada, is graphically shown on Chart VI, and the average values and departures from the normal are shown for each station in Tables I and V.

A comparison of the chart of monthly mean pressure for December, 1907, with that of the preceding month shows a reduction in the mean sea-level pressure over all portions of the United States and Canada, except small areas near the south Atlantic and south Pacific coasts, where slight increases occurred.

The decrease in pressure was most pronounced over the Canadian Maritime Provinces and the north Pacific coast, where it ranged from 0.20 to 0.25 inch. This is the reverse of normal conditions, which show a uniform increase in average pressure from November to December over all portions of the United States, except over the north Pacific coast and northern New England, where the pressure is normally slightly less than in November.

The average sea-level pressure during December, 1907, was from .05 to .15 inch below the normal over practically all portions of the United States and Canada, the only exceptions being the southern parts of California, Arizona, New Mexico, and western Texas, where it was slightly above the normal.

Comparatively high mean pressure, about 30.15 inches, prevailed over the central portions of the Rocky Mountain, Plateau, and Pacific coast districts, and another moderately high area, about 30.10 inches, was maintained over the South Atlantic and east Gulf States.

Pressure averaged unusually low along the entire northern border, decreasing rapidly from about 30.15 inches over northern Wyoming to about 29.85 inches over the Canadian Northwest Provinces and to slightly less over the more eastern Canadian districts.

With the ridge of highest pressure extending from the south Atlantic coast northwesterly to the central Rocky Mountain district and southwesterly to the Pacific coast, the surface winds over all northern districts from the Atlantic to the Pacific and extending into Canada, were largely from southerly points.

Over the east Gulf States, portions of Texas and the southern Rocky Mountain, Plateau, and Pacific coast districts northerly winds were the rule.

From the Mississippi Valley eastward there was a general increase in the surface wind movement, and also over the north Pacific coast district, where the month was an unusually stormy one.

Over the Great Plains and Rocky Mountain and Plateau districts storms were infrequent and the wind movement was correspondingly less than the average.

TEMPERATURE.

It is probable that during no December since 1877 has there been such a universal excess of temperature over the territory from the Mexican boundary northward to the Arctic Circle as is shown by the records for the current month. Only on rare occasions are such large portions of the United States and Canada dominated by similar temperature conditions.

The Rocky Mountain system appears to be a dividing line, on either side of which temperature conditions are generally at variance. If there is an excess or deficiency over the districts to the east, there is generally a compensating deficiency or excess in the districts to the west. During the current month the temperature was in excess of the normal over practically all districts in the United States, and, except at a few points in British Columbia, the whole of Canada appears to have experienced similar conditions.

Over nearly all the more northern districts of the United States the average temperature for the month exceeded the normal from 4° to 8°. The excess of temperature was well distributed thru the various decades of the month, the cold periods being confined to the second decade of the month and generally of short duration. A slight deficiency in mean temperature, less than 1° per day, prevailed over eastern Alabama, western and northern Georgia, and western South Carolina.

Maximum temperatures were not unusually high or minimum temperatures unusually low over any districts. Maximum temperatures slightly above 80° were recorded over the southern portions of Florida, Texas, and California, while over the upper Lake region, the upper Mississippi Valley, and in the mountain

districts of Idaho, Montana, Wyoming, and Colorado they did not go above 50°.

Temperatures of 32° or lower extended to the coast line of the east Gulf States and into northern Florida and over California, except near the coast and at the lower elevations of the southern part of the State. Temperatures from 0° to -30° were recorded in the mountain districts of the west and from -10° to -20° in the northern portions of New York and New England.

PRECIPITATION.

The distribution of precipitation during December, 1907, is graphically shown on Chart IV by appropriate shading or by figures representing the actual amount of fall.

The heaviest precipitation for the month occurred on the western slopes of the Sierra Nevada, Cascade, and Coast ranges of mountains in northern California, Oregon, and Washington, where the depths of fall ranged from 10 to 35 inches. At Roseburg, Oreg., the amount for the month, 12.82 inches, was the greatest fall ever reported from that station.

Amounts from 8 to slightly more than 10 inches occurred over the southern portion of the east Gulf States, and amounts from 4 to 6 inches were general over the remaining portions of that district, and also over the Atlantic coast States and portions of the Lake region and locally in the Ohio Valley.

Over the upper Mississippi and Missouri valleys, the Great Plains, and the lower elevations of the Rocky Mountain and Plateau districts the amounts of precipitation were generally less than 1 inch.

The amounts of precipitation over portions of the mountain districts from northern California to Washington ranged from 5 to 15 inches above the normal, while over western Florida and the southern portions of Alabama and Georgia they ranged from 4 to 6 inches above. Over the remaining portions of the east Gulf States, the Atlantic coast, and lower Lake region the normal was exceeded by amounts generally less than 2 inches, and there was a small excess over the central portions of the Great Plains, Rocky Mountains, and Plateau districts.

Precipitation was deficient by small amounts over most of the Ohio Valley, the Mississippi and Missouri valleys, and the northern and southern portions of the mountain and Plateau districts. Deficiencies of about 2 inches occurred locally over southern California and of more than 4 inches over extreme northwestern Washington.

SNOWFALL.

The area over which snow occurred during December was but slightly greater than during the preceding month, altho the depth of fall averaged much greater.

Amounts from 5 to 20 inches occurred in the Appalachian Mountains from Virginia northward, over New England, and in the Lake region, and greater depths locally in the mountain and Plateau districts of the west. Depths from 50 to 70 inches occurred over the high elevations of the Sierra Nevada Mountains in northern California, and considerable depths were reported from the mountain districts of Washington, Oregon, and Idaho. Over the upper Missouri Valley and northern slope districts the total fall for the month was generally less than 5 inches.

But little snow remained on the ground at the end of the month, except in the more northern districts and over the mountain ranges of the west. In central and northern Maine depths from 6 to 8 inches were reported, and similar depths prevailed over portions of Michigan, Wisconsin, southern Minnesota, and northern Iowa.

Over the high elevations of the Rocky Mountains from central Colorado northward and the high Sierra of central and northern California considerable snow had accumulated, depths of more than 5 feet being reported from points in the last-named mountains.

HUMIDITY AND SUNSHINE.

The average relative humidity was slightly below normal over the cotton belt and South Atlantic coast States, and locally over the upper Lake region and portions of Oregon, Washington, and Idaho. Over most of the interior districts it was above normal, and to a marked extent over the central and southern slope, Mountain, and Plateau districts, where similar conditions have been maintained thruout the year.

There was a pronounced absence of sunshine in the Ohio, Mississippi, and Missouri valleys, and over the Plateau and Pacific coast districts. In the latter region the percentage of clear sky ranged from 40 to less than 10 per cent of the possible amount.

Along the Atlantic coast, over Texas, New Mexico, Arizona, and the northern slope there was a slight excess over the usual amount of sunshine.

WEATHER IN ALASKA.

Scattered reports from points nearly as far north as the Arctic Circle indicate that December, 1907, was a rather mild month over the Territory. Over the southern coast districts the minimum temperatures scarcely reached the zero point.

In the southern and eastern interior portions, including the Copper River and upper Yukon districts, cold weather prevailed about the 10th, and again during the latter portion of the month, but no extremely low temperatures were reported, the lowest recorded at Circle City being -38°, at Fairbanks -36°, at Copper Center -42°, and at Dawson -30°.

Moderate temperature prevailed during the first and third weeks of the month, with the minimum temperature frequently above zero.

Considerable snow accumulated in the interior districts, the depths ranging from a few inches to about 3 feet. Near the coast the precipitation was mostly in the form of rain.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	12	33.4	+ 3.7	-19.3	- 1.6
Middle Atlantic	16	37.7	+ 2.1	-13.7	- 1.1
South Atlantic	10	47.8	+ 0.6	+ 5.4	+ 0.4
Florida Peninsula*	8	61.3	+ 0.2	+12.8	+ 1.1
East Gulf	11	49.0	- 0.1	+14.5	+ 1.2
West Gulf	10	50.5	+ 1.2	+20.1	+ 1.7
Ohio Valley and Tennessee	13	38.3	+ 1.8	- 5.3	- 0.4
Lower Lake	10	31.7	- 2.4	-20.1	- 1.7
Upper Lake	12	26.1	+ 1.9	-12.7	- 1.1
Upper Dakota*	9	21.3	+ 9.1	-10.6	- 0.9
Upper Mississippi Valley	15	31.6	+ 4.3	- 4.7	- 0.4
Missouri Valley	12	32.4	+ 5.5	+ 5.7	+ 0.5
Northern Slope	9	25.8	+ 2.4	- 1.7	- 0.1
Middle Slope	6	35.6	+ 2.7	+14.8	+ 1.2
Southern Slope*	7	44.4	+ 2.0	+19.2	+ 1.6
Southern Plateau*	12	42.1	+ 2.2	+ 2.9	+ 0.2
Middle Plateau*	10	32.0	+ 3.9	+14.1	+ 1.2
Northern Plateau*	12	32.5	+ 1.9	+ 2.1	+ 0.2
North Pacific	7	43.5	+ 1.9	+ 2.8	+ 0.2
Middle Pacific	8	49.4	+ 1.1	+ 0.1	0.0
South Pacific	4	54.9	+ 2.3	+ 9.5	+ 0.8

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says:

In British Columbia, over the northwestern and northern portions of the province, the temperature was average or slightly below; elsewhere thruout the Dominion it was above the average and nearly everywhere to a marked extent. In the Western Provinces the positive departure ranged from 5° to 9°; in Ontario from 2° to 7°; in Quebec from 5° to 8°, and in the Maritime Provinces from 3° to 8°.

In British Columbia, Cariboo reported an excess of precipitation equivalent to nearly 90 per cent, but elsewhere in the province there was a general deficiency, amounting at Victoria to 52 per cent. In the Western Provinces, in the southern portion of Saskatchewan, there was a positive departure of 200 per cent at Regina and 79 per cent at Swift Current, otherwise the negative departure was everywhere marked; Winnipeg and Medicine Hat recorded deficiencies of 98 and 63 per cent, re-

spectively. In Ontario the distribution of precipitation was very variable, some localities experiencing an amount much in excess of the average and others again much less than the average. The most noticeable extremes were positive departures of 98 per cent at Toronto and 46 per cent at Ottawa, and negative departures of 49 per cent at White River and 94 per cent at Port Arthur. In Quebec the average amount was exceeded in all localities, more so in the western than in the eastern portion; Montreal recorded 60 per cent above the usual quantity. In the Maritime Provinces, in the region of the Bay of Fundy and very locally elsewhere, the precipitation was less than the average, but over the large remaining portion of the provinces the average was exceeded. The noticeable departures were a deficiency of 39 per cent at St. John and 79 per cent at Chatham, and an excess of 25 per cent at Halifax and Charlottetown.

At the close of the year there was a remarkable absence in the Dominion of any pronounced depth of snow on the ground, and in many localities there was none. Considering the provinces individually the conditions were: In British Columbia none on the lowlands and apparently little on the mountains; Alberta none; Saskatchewan and Manitoba 1 inch to 6 inches; Ontario from a trace to 15 inches (Ottawa recorded the 15 inches, whereas White River, north of Lake Superior, gave only 4 inches); Quebec from 5 to 11 inches; the Maritime Provinces 1 inch to 3 inches in northern and none in southern localities.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.	%	Inches.	Inches.
New England.....	12	4.33	130	+1.0	-0.9
Middle Atlantic.....	16	4.09	128	+0.9	-0.8
South Atlantic.....	10	4.52	128	+1.0	-10.0
Florida Peninsula.....	8	4.87	182	+2.2	-7.3
East Gulf.....	11	6.54	144	+2.0	+0.5
West Gulf.....	10	2.46	86	-0.4	-5.6
Ohio Valley and Tennessee.....	13	2.99	86	-0.5	-2.7
Lower Lake.....	10	3.82	131	+0.9	-0.8
Upper Lake.....	12	1.87	86	-0.3	-2.9
North Dakota.....	9	0.29	49	-0.3	-2.2
Upper Mississippi Valley.....	15	1.33	73	-0.5	+0.9
Missouri Valley.....	12	0.91	90	-0.1	+3.0
Northern Slope.....	9	0.65	68	-0.3	+0.1
Middle Slope.....	6	0.98	126	+0.2	-1.5
Southern Slope.....	7	1.21	109	+0.1	-0.4
Southern Plateau.....	12	0.25	26	-0.7	+2.7
Middle Plateau.....	10	1.23	119	+0.2	+1.8
Northern Plateau.....	12	2.04	117	+0.3	+1.3
North Pacific.....	7	3.00	114	+1.1	-10.0
Middle Pacific.....	8	4.80	104	+0.2	+0.5
South Pacific.....	4	1.40	64	-0.8	+0.5

* Regular Weather Bureau and selected cooperative stations.

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	6.2	+0.4	Missouri Valley.....	5.8	+0.7
Middle Atlantic.....	6.1	+0.7	Northern Slope.....	5.4	+0.8
South Atlantic.....	5.1	+0.4	Middle Slope.....	5.2	+1.2
Florida Peninsula.....	4.6	0.0	Southern Slope.....	4.0	-0.4
East Gulf.....	6.0	+0.8	Southern Plateau.....	2.9	-0.5
West Gulf.....	4.6	-0.7	Middle Plateau.....	5.9	+0.8
Ohio Valley and Tennessee.....	7.2	+1.1	Northern Plateau.....	7.4	+0.6
Lower Lake.....	8.0	+0.4	North Pacific.....	8.3	+1.1
Upper Lake.....	7.4	+0.3	Middle Pacific.....	7.5	+2.1
North Dakota.....	5.3	+0.1	South Pacific.....	4.8	+0.1
Upper Mississippi Valley.....	6.5	+0.8			

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	77	+1	Missouri Valley.....	75	0
Middle Atlantic.....	77	+2	Northern Slope.....	75	+7
South Atlantic.....	79	+1	Middle Slope.....	68	+2
Florida Peninsula.....	81	0	Southern Slope.....	68	0
East Gulf.....	77	0	Southern Plateau.....	52	+4
West Gulf.....	73	-1	Middle Plateau.....	70	+6
Ohio Valley and Tennessee.....	77	+1	Northern Plateau.....	78	-1
Lower Lake.....	80	+2	North Pacific.....	85	-1
Upper Lake.....	83	+1	Middle Pacific.....	83	+2
North Dakota.....	82	+3	South Pacific.....	72	+3
Upper Mississippi Valley.....	80	+2			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I.....	14	70	e.	North Head, Wash.....	25	84	s.
Do.....	31	66	nw.	Do.....	31	62	s.
Buffalo, N. Y.....	23	50	sw.	Pittsburg, Pa.....	30	54	w.
Do.....	31	62	w.	Point Reyes Light, Cal.....	4	52	s.
Cape Henry, Va.....	4	56	nw.	Do.....	6	72	s.
Do.....	5	59	nw.	Do.....	10	66	s.
Do.....	14	51	e.	Do.....	12	58	s.
Charleston, S. C.....	13	50	se.	Do.....	15	52	se.
Cheyenne, Wyo.....	24	56	w.	Do.....	19	82	nw.
Hatteras, N. C.....	5	52	n.	Do.....	29	72	s.
Huron, S. Dak.....	24	51	nw.	Do.....	30	70	s.
Mount Tamalpais, Cal.....	4	62	sw.	Pueblo, Colo.....	26	52	nw.
Do.....	10	78	sw.	Richmond, Va.....	23	53	s.
Do.....	12	58	sw.	Seattle, Wash.....	4	56	sw.
Do.....	19	50	w.	Do.....	13	58	s.
Do.....	26	50	sw.	Sioux City, Iowa.....	24	58	nw.
Do.....	30	50	sw.	Southeast Farallon, Cal.....	6	53	s.
Mount Weather, Va.....	10	57	nw.	Do.....	10	50	s.
Do.....	11	52	nw.	Do.....	29	61	s.
Do.....	19	54	nw.	Do.....	30	52	s.
Do.....	30	70	nw.	Syracuse, N. Y.....	30	60	s.
Nantucket, Mass.....	10	54	s.	Tatoosh Island, Wash.....	2	52	s.
Do.....	14	55	e.	Do.....	4	58	s.
New York, N. Y.....	14	56	ne.	Do.....	8	64	e.
Do.....	31	54	w.	Do.....	11	54	sw.
North Head, Wash.....	2	52	s.	Do.....	12	50	ne.
Do.....	3	60	se.	Do.....	13	52	w.
Do.....	4	69	se.	Do.....	19	56	e.
Do.....	11	78	s.	Do.....	20	66	s.
Do.....	12	96	se.	Do.....	23	82	sw.
Do.....	13	50	w.	Do.....	25	56	w.
Do.....	20	70	se.	Do.....	29	60	e.
Do.....	21	61	s.	Do.....	30	66	e.
Do.....	23	70	s.	Do.....	31	52	e.